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Student learning in the workplace: The learning evaluation and reflection narrative (LEARN) framework

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Purpose

The paper outlines a proof of concept for a framework to support students in reflecting on and in articulating their disciplinary, contextual and professional learning in the workplace. The purpose of the framework was to help students to recognize and articulate their transferable employability skills in preparation for the workplace or further studies upon graduation.

Findings

Survey results demonstrated changes in students' orientation toward learning. Additionally, we found students were able to deliver sophisticated responses through engagement in the LEARN framework, articulating recognition and self-awareness of their personal and professional learning as well as relevance of their learning within and beyond their workplace setting.

Limitations

Our sample is small, and we therefore recommend further work to evaluate the effectiveness and practicality of the LEARN framework in larger cohorts and in alternate work environments.

Research implications

The responses suggest the LEARN framework is worthy of further investigation as a tool for students to articulate lifelong learning skills and behaviors, as it offers an opportunity for students to engage in reflective, deep learning.

Originality/ value

This research builds on existing studies on the evaluation of lifelong learning, adapting a framework and testing its implementation in the workplace setting.

Introduction

Higher education institutions face ongoing challenges to educate the future generation of skilled professionals needed to keep global market economy alive and flourishing (Cranton & King, 2003; De Viron & Davies, 2015; Glisczinski, 2007). Preparing students to enter the 21st-century labour market is not simply a matter of helping students acquire technical skills; rather, the changing demands of the labour market require that higher education graduates acquire a range of skills to be successful in future employment. As summarized by McMahon, Patton, and Tatham, (2002), “individuals will be required to: repeatedly change work roles; actively engage in learning throughout life; [and] develop the employability and life/career management skills necessary to thrive in the 21st century” (p. 1). Moving toward a more sustainable world, graduates also need to be reflexive and reflective (Cullingford & Blewitt, 2013). To that end, work in the current study was motivated to by the desire to support students in reflection on and articulation of their learning in the workplace and to investigate a framework to develop these traits.

As economies change and industries are restructured, transferable, lifelong skills such as autonomy, creativity, critical thinking, problem solving, and self-management skills are becoming increasingly important (Bridgstock, 2009; Snell, Gatt, & Gekara, 2016). According to Hainline, Gaines, Feather, Padilla, and Terry, (2010), the challenge for higher education is “to provide a career-relevant education that also produces critical, enlightened thinkers and lifelong learners” (para. 9). Higher education institutions offer a range of situated learning opportunities to prepare students for the workplace, such as service-learning, internships, co-ops, work placements, or paid employment. There is a growing body of evidence suggesting that situated learning is an effective strategy to meet the challenge of educating career-ready graduates (e.g., Eisner, 2010; Jackson, 2013). Clarke (2004) summarizes research on learning in the workplace, contrasting differing perspectives as either “a process unique and confined to the individual, [or] learning as embedded within socio-cultural practices” (p. 141). Hager (2004) also proposed that individual learning in the workplace relates to an individual’s pursuit for lifelong learning. Positioning learners to develop lifelong learning skills involves offering students opportunities to engage more deeply in learning that extends beyond traditional transmission approaches to classroom learning (Cremers, Wals, Wesselink, Nieveen, & Mulder, 2014). For instance, students’ development of lifelong learning skills may be enhanced when they engage in self-direct learning in situations where their learning is embedded in everyday practical challenges that they meet in their lives (Boud & Falchikov, 2006; Cremers et al., 2014). Furthermore, Zimmerman (1990) identifies key processes enabling self-regulated learning, such as “systematic use of meta-cognitive, motivational and/ or behavioural strategies” (p. 5).

A supervised work environment can provide an ideal opportunity to engage what Kolb (2014) describes as an experiential learning cycle. In this cyclical approach, students engage in a concrete experience, are provided prompts and opportunity to reflect on that experience and conceptualize their learning, and apply their understanding in an active way. Furthermore, individuals grow in their capacities for lifelong learning when they have opportunities to learn through practice in a range of formal, non-formal, community and workplace contexts (Clemans, 2015).

Research suggests that assessment is an essential part of learning in the workplace (Berg et al., 2007), yet learning in workplace settings can be difficult to assess in connection to

pre-determined or precisely defined learning outcomes. Clayton & Ash, (2009) point out that “critical reflection oriented toward well-articulated learning outcomes is key to generating, deepening, and documenting student learning in applied learning” (p. 25). Evidence suggests that students require educational supports in order to develop skills such as critical reflection and to grow as self-directed, lifelong learners (Jossberger, 2011; Mifflin, Campbell, & Price, 2000). Workplace learning is often highly situated, context-dependent, and may not be directly observable nor easy for individuals to articulate (Lave & Wenger, 1991). Thus, situated learning in the workplace can be difficult to evaluate. Professional programs such as Nursing and Engineering require the assessment of professional learning as part of their accreditation requirements, and often focus on specific skill attainment. Tynjälä (2013) proposes a myriad of learning outcomes relevant to workplace learning, including task performance, personal development, teamwork, role performance, knowledge and work climate. It would be a challenge for any workplace supervisor to evaluate such a diversity of areas.

The aim of our study was to investigate a framework to help students self-reflect and articulate their learning in the workplace, specifically a framework focused on prompting students’ conceptions of their transferable, employability skills in preparation for the workplace upon graduation. As educators and researchers, we specifically wanted to investigate how this framework could support students in reflecting on and in articulating their disciplinary, contextual and professional learning in the workplace. In the following sections we describe the method, findings and discussion as a proof of concept for a learning evaluation and reflection narrative (LEARN) framework used in this study.

Method

Researchers developed a Learning Evaluation and Reflection Narrative (LEARN) framework to facilitate real-world articulation of workplace learning. As part of their work placement, a group of four undergraduate students completed the Transferable Learning Orientation Survey (TLO), a pre- and post-work survey prompting reflection on learning goals and behaviours. The TLO comprised five constructs: goal orientation, learning belief, self-efficacy, transfer (deep learning), and organization. Subsequently, participants completed a written reflection and a mock-interview scenario, where they verbally articulated their abilities and the applicability of their skills to future employment opportunities. Results of thematic analysis of students’ written reflections are presented in this paper.

Participants

The learning outcomes assessment project (“Queen’s Learning Outcomes Assessment,” n.d.) employs a number of undergraduate students for summer work placements each year to support its assessment research. All four of the summer work placement students provided consent for the research team to include their survey as well as the reflection activities as part of this study. Although these students were paid employees, we have referred to them as students for this investigation of their workplace learning. The students were female; one was a fourth-year Concurrent Education student, the others were in their third year of undergraduate education in the programs of Engineering, Science and Psychology.

The Workplace Learning Experience

The students worked 35 hours a week for a 16-week summer work term. They collaborated with the project manager and formed a community together as they worked to achieve shared project goals. As the focus of their work was on cognitive skill assessment, participants' meta-cognitive processes were naturally piqued. Their duties included evaluating (marking) a large number of student course artifacts (assignments) and using rubrics to define levels of achievement in critical thinking, problem solving and communication. The students were provided with training for marking protocols but were given autonomy to set their own interim goals. Students were also responsible for interpreting the results and analyzing the data from the larger Learning Outcomes Assessment project mentioned above for the purpose of documenting cohort-level achievement of outcomes over time.

In their work placements, students were provided with guidance, practical opportunities to engage in both independent and collaborative work, and opportunities to reflect on their individual learning. During weekly meetings with the research manager, students reported on their progress and identified areas in their work where they required clarification or support. Along with ongoing feedback, students were encouraged to undertake background reading or training in research methods to carry out the requirements of the project. For example, they needed to investigate which analytical procedure might be appropriate to answer a given question, discuss the options with their peers, weigh the pros and cons of an approach, and finally decide on a course of action. The culmination of the summer work was the compilation and authorship of detailed evidence-based reports for departmental instructors and institutional leaders. The students quickly understood the significance of the 'real-world' roles and responsibilities because instructors relied on the reports to inform strategic refinements to course assignments. In addition to these reports, the students also gave a summary presentation to the project's principal investigators.

During the induction and orientation phase of the work term, the students completed the Transferable Learning Orientation (TLO survey), which is a learning orientation and goal attainment survey developed by Simper, Kaupp, Frank, and Scott (2015). Assessment of lifelong learning skills was one of the outcomes under investigation in the larger study, and the TLO was developed for evaluation of lifelong traits in large cohort classes. The TLO has been an effective tool for use in large cohorts of undergraduate students "to reflect on their learning skills and attitudes, and (as) a mechanism to provide feedback" (p. 1173). Lifelong learning is particularly difficult to define, but it was operationalized in the TLO using the dimensions of motivation, learning belief, self-efficacy, transfer and organization. The TLO survey was written for an academic context, so in our study items were adapted for students in the workplace context we describe above. The changes in the items involved shifting the references to extrinsic motivators (e.g. describing financial compensation rather than course grades) and referencing work deliverables as replacement for course work (examples of prompts provided in Table 1¹). The questionnaire comprised 20 Likert scale questions, five multiple choice questions (rubric descriptors) and five open-ended responses.

¹ Note: The original wording of the survey is available at <http://www.queensu.ca/qloa/assessment-tools/transferable-learning-orientations-tlo-survey>

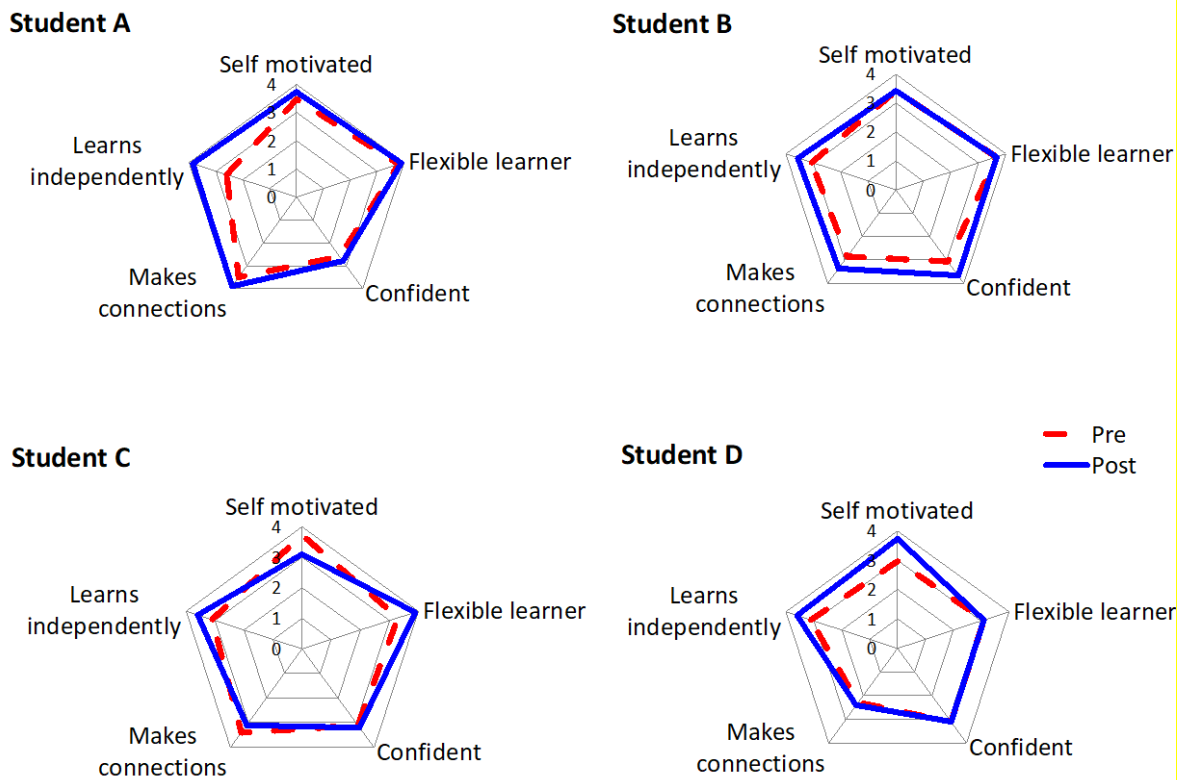
The survey formed part of a diagnostic to identify areas in which individuals might need training, to orient the students to skills being addressed in their summer work, and to provide a benchmark of responses to enable comparison of the individual learning achieved by the end of the summer. At the end of their work placement, students engaged with the TLO again with wording converted to the past tense. Results from the pre-and post-survey were provided to the students in the form of spider diagrams (see Figure 2), where Likert scale items were converted to a four-point scale in line with the rubric descriptor levels. The open-ended question responses were also provided in a table for reflection (not included here).

Table 1. Overview of Transferable Learning Orientation (TLO) dimensions

Dimension	Likert scale questions	Multiple choice (highest criteria)	Open ended response	Label
Outcome motivation	Three questions E.g. Getting paid for my work is the most important thing for me right now (r)	Intrinsically motivated (I am motivated by intense curiosity to understand subject matter; getting paid is a secondary concern.)	What personally motivates you?	Self-motivated
Learning Belief	Four questions E.g. If I try hard enough, then I will be able to learn the skills necessary for this job	Growth mindset (I am capable of changing my thinking or approach to learning, and totally in control of effort, time management, and work processes.)	What control do you have over your success?	Controls own learning
Self-efficacy	Four questions E.g. I am confident I can master the skills associated with this job role	Belief in own ability (I feel very confident that I have all of the necessary knowledge/ skills to excel in meeting all of the job requirements.)	What do you lack confidence in doing?	Confident
Transfer	Three questions E.g. I tried to relate ideas in this job to those in academic courses	Deep learner (I make meaningful connections between new and previous learning when I apply knowledge and skills creatively in all of my work duties.)	How do you apply cognitive strategies?	Makes connections
Organization	Four questions E.g. I often constructed outlines to help me organize my thoughts	Independent learner (I strategically manage my schedules, and make necessary accommodations, in prioritizing to meet all of my goals.)	How do you organize your work process?	Learns independently

LEARN Framework for articulating workplace learning.

Figure 2. Learning Evaluation and Reflection Narrative: Articulation of learning framework



Each student prepared a 500-word narrative response to an open-ended question: *Describe a workplace experience where you learned skills that you will need to be successful in this role (job/graduate program)*. Following this, students were asked to prepare for a job/graduate school mock interview. The purpose of the narrative response was to empower students to articulate the full extent of their learning and specific skills gained in the workplace through an oral presentation. The additional benefit of preparing for a mock interview was that it prompted the students to perform self and peer reviews of their written reflections which resulted in a form of meta-reflection. The interviews were conducted with a panel comprised of the principal investigator of this study (a senior administrator) and research staff, including the research manager. Even though their responses had no real bearing on their current job or their future status as a student, anecdotal feedback, such as “I was nervous” and “it felt like it was real”, suggested that the mock format successfully replicated an actual interview for a job or entrance to graduate studies.

The researchers analyzed the 500-word reflections using a thematic analysis approach, which (Braun & Clarke, 2006) is defined as, “a method for identifying, analyzing and reporting patterns within data” (p. 79). The researchers read the reflections to become familiar with the data. The content was then coded thematically and organized into broader themes that describe aspects of learning that the LEARN framework helped students to articulate.

Findings

The quantitative results shown in the spider diagrams in Figure 1 demonstrate modest growth in specific areas for each of the students. However, with a sample of four, there

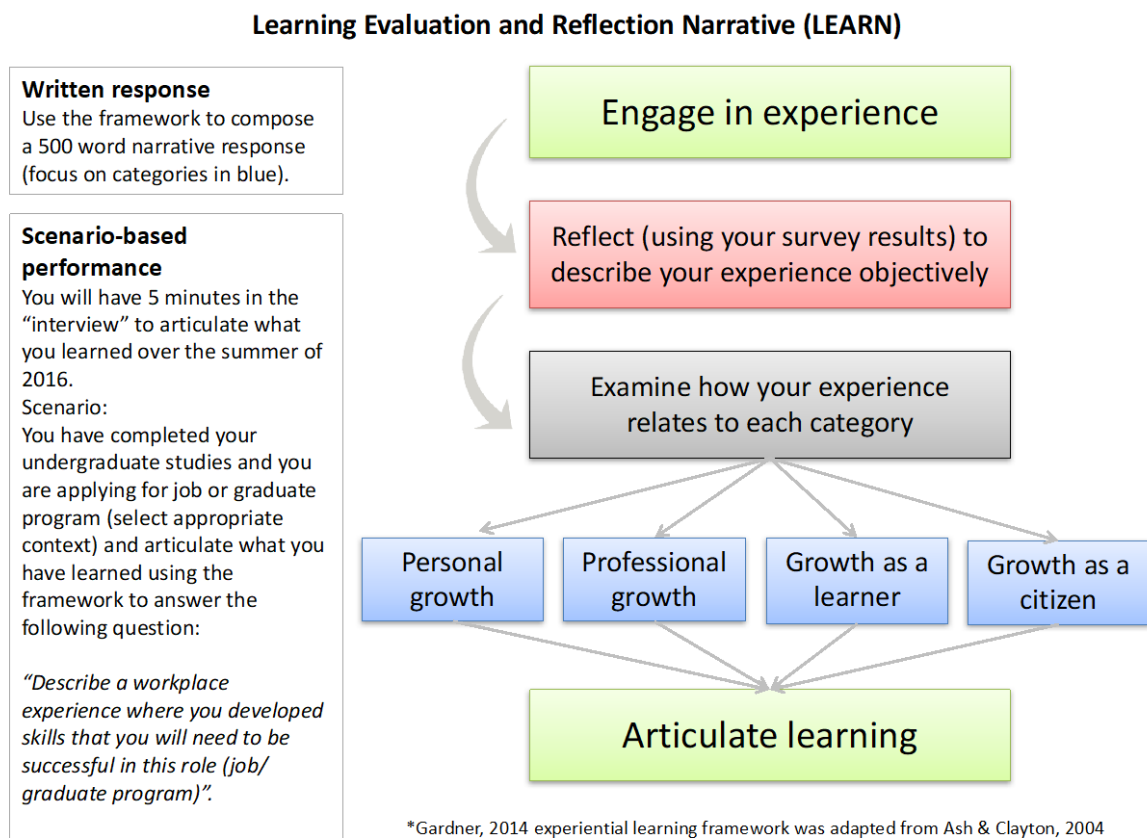
was insufficient data to assess gains. The spider diagrams were provided to students to prompt their reflective processes. As demonstrated by Crick & Yu, 2008, people can actually regress in areas relating to lifelong learning as they go through key stages of their life. We saw a decline in the goal orientation (motivation) dimension of Student C and it may have been that an extrinsic driver such as money or notoriety may have become more important for them over their work term. The open-ended responses provide some insight into the rationale for change. Student A made gains in the area of organization (anchored by the label “learns independently”). This result was reinforced by the student’s response to the open-ended questions from the beginning and end of the work term. At the beginning of the term, Student A reported: “...I keep myself organized, can set realistic time limits, and am less likely to make major step mistakes.” By the end of the work term, the student’s response was:

...I also learned how to effectively organize datasets; however, at times it became a trial and error process. When working with various datasets it is easy to become disorganized; however, labeling file folders and individual files correspondingly, as well as formatting data in an effective manner, helped me to stay organized.

The specificity described here is far richer than the gains shown in the quantitative data.

The goals of the LEARN framework were to prompt students to communicate their personal and professional learning and to recognize the relevance of their learning within and beyond their workplace setting. Students’ survey responses provided them with a point of reflection for direct comparison from the beginning of the summer.

Figure 1. Spider diagrams for pre-post measures reported by students



They discussed these responses with their work manager/mentor to informally map the responses from the TLO survey to their quantitative scores, thus providing multiple points for students' self-reflection on their learning. After reviewing their TLO results, it was evident that the students recognized areas of personal growth, but the next step for them was to formally articulate that learning.

In the following section, we categorize our findings in three main themes that help us to speak to the capacities of LEARN for articulating the following about students' learning: a) learning transfer; b) an appreciation that learning is both independent and social in nature; and c) their unique conceptions of what lifelong learning means.

Learning Transfer

By engaging in the activities associated with the LEARN framework, students articulated some meaningful new extensions in their thinking that broadened their learning beyond the current academic realm and into possible future work situations. All four students indicated the transferability of certain technical skills they developed in different areas, such as using assessment rubrics, writing reports and code, using statistical analysis software, and multiple means for data visualization. One student said, "I know I can use these skills in many different settings in order to make meaning out of any work I produce, especially in a role like this one." Another person commented, "These skills will be very useful in my fourth year of engineering, and future job." A third student could directly connect a technical skill to her future graduate work in education:

In this position, I have become very familiar with different types of educational assessment and in particular rubric assessment. As a graduate student, I am aware that part of my responsibilities would include acting as a teaching assistant for various courses and I feel that my experience would be an asset in this role.

Finally, one student extended her learning further into a future employment situation and explained:

I feel that this position in many ways has prepared me to succeed, not just in grad school, but also in any future endeavors. I have learned how to set goals for myself, manage my time effectively, and also adapt my goals and schedules when needed, which I feel will be immensely beneficial as I move forward.

Interestingly, students also recognized and articulated some transferable skills associated with lifelong learning, such as the ability to problem solve and think critically. Students reported that they developed these lifelong learning skills through opportunities to collaborate with others, which prompted them to consider alternative perspectives and to imagine other possibilities as answers to the problems they were trying to solve. Our findings here corroborate Clemans's (2015) assertion that when learners come to see the value of such lifelong learning aspects, they are "better able to acknowledge multiple forms of knowledge through it and make more immediate connections between what they come to know and what they do in response" (p. 147).

Learning is both Personal and Social in Nature

Skills are important for fulfilling any job role, and it is fair to say that, in higher education, our goal is to enable students to move beyond our institutions with the ability to articulate those skills to future employers. A prevalent theme in all students' narrative responses was their appreciation of their own learning processes. As Kolb (2014) states, "lifelong learning is often conceived as a process of learning from direct life experiences that is controlled by the individual" (p. xix). The students articulated what the personal and social aspects of their learning looked like, including the value and relevance of having each type of experience as part of their workplace learning.

The topic of teamwork was common amongst the students' reflections as well. Each student highlighted the importance of working with their peers to complete tasks such as compiling reports, seeking additional information, and extending their own knowledge about topics related to their work. Students commented on how working with a team of people who possess different skillsets helped to enhance their own teamwork skills. Yet, the most common theme across all student responses was the value of having the chance to collaborate with a team of students from different disciplines.

Students expressed their learning from this interdisciplinary experience in several ways, which helps us to highlight some of the nuances of their workplace learning. One student commented: "On this project, I worked in an inter-disciplinary team with other students who graduated from the Arts and Science faculty and learned a lot from their approaches to solving problems." This response was similar to another student who also highlighted her appreciation for the impact that other perspectives have had on her learning:

I think having the opportunity to collaborate with people from different faculties is especially important in higher education because by this point people have developed points of view based on their experiential backgrounds. Having these different perspectives influences me to approach a task in different ways instead of just defaulting to my normal approach. I think that I am now more inclined to seek out differing points of view amongst my peers and believe that this will greatly enrich my future workplace interactions.

In addition, the student extended her understanding beyond her appreciation of small interdisciplinary teams and spoke about the greater impact that collaborations have beyond disciplinary boundaries:

It's not enough anymore to be a lone expert in one area of research; we're living in an interdisciplinary world where expanding your knowledge base means reaching out and making connections with other individuals interested in similar topics, whether that's education, assessment or analyzing an organism at a molecular level.

We see these responses as evidence that the LEARN framework is an effective tool to elicit students' articulation of new perspectives, and for some students to make connections to how those perspectives would be useful in the wider societal context.

In addition to collaborating with each other, students had many chances to work independently during their workplace experience. In their reflections, they commented on building valuable independent work skills such as organization, communication,

analysis, and assessment. As the spider diagrams also show (see Figure 1), students reported an increase in their self-motivation and a sense of ownership for their work in their reflections. One student explained, “The self-directed nature of our work this past summer allowed me to develop an understanding of the importance of the project and thus develop an intrinsic interest and dedication to the research.” In another case, a student’s response helped us to see the capacity for the LEARN framework to help students to articulate their own potential for leadership roles as well. This student wrote,

I have learned the importance and benefits of making use of everyone’s different strengths and building positive working relationships with my peers. I think this is an important skill to have as I feel that people are most efficient when they possess the ability to recognize the talents of those around them and both cultivate and leverage the strengths of the group. I also gained valuable experience working as a leader and mentor and understand how beneficial it is to work together to achieve a common goal.

We understand from students that the interplay of independent work and social, collaborative experiences that they engaged in promoted the richest form of learning: an appreciation for learning process itself. The following student comment expresses this sentiment saying,

while I still think that this individual side of learning is important, I feel that this job really opened my eyes to the value in exploration, and how much more you learn by engaging in discussion with others. In other words, over the course of the summer I learned to appreciate the learning process, rather than focus solely on the end task of the project.

This student suggests that focusing on the end product may be counter-intuitive to the learning process. Her workplace experience disrupted her typical way of thinking about learning. This appreciation, for the individual and social side of learning, may be at the core of what higher education institutions are trying to foster in students when we talk about helping students to develop as lifelong learners. Given that lifelong learning has no accepted universal definition, and that the meaning and value of learning is subjective, we suggest that our institutional understandings and articulations of lifelong learning are highly contextual and are found in students’ own experiences and articulation of their understanding of those experiences.

Students have Unique Conceptions of Lifelong Learning

Lifelong learning is difficult to define and the literature stresses that there is no universal definition (Kirby, Knapper, Lamon, & Egnatoff, 2010). Learning is highly relative to the individual learner and so were the students’ conceptions of what it means to be a lifelong learner in our study. It is important to highlight that the students were not directly asked what lifelong learning meant to them. Rather, in their reflections, students made such connections and expressions about lifelong learning without prompts. One student comment speaks volumes about our disparate understanding of lifelong learning skills compared to what these skills look like in higher education. She said, “I’ve learned a lot about learning assessment, and what professors are actually looking for when they talk about problem solving or critical thinking, which usually aren’t well defined.” We considered students’ articulation of lifelong learning skills such as problem solving,

critical thinking, communication, and learning transfer also to be indicative of what they think it means to be a lifelong learner. Typically, students described lifelong learning skills when they talked about assessing other students' abilities to think critically and solve problems when they had to mark standardized tests and use assessment rubrics. Another student articulated, "I have developed a strong sense of what excellence in critical thinking, problem solving, and written communication look like within a broad range of educational contexts."

Students in our study showed evidence of their understanding of lifelong learning when they articulated their beliefs about learning, such as, "It's about assessing interactions by combining different peoples' technical skills, soft skills, and communicating relevant research to ensure success." Another student explicitly states her beliefs about the lifelong learning skills associated with her future graduate studies, "I believe that the ability to demonstrate strong critical thinking, problem solving, and written communication skills in all aspects of one's work is important and necessary for success in graduate education."

The tasks students completed during their workplace learning experience, accompanied with having to articulate their learning using the LEARN framework gave students the opportunity to better understand what lifelong learning skills look like and what it feels like to engage in work that develops these skills. One student stated, "I feel that working on the learning outcomes project provided me with a better understanding about what it means to be a lifelong learner." We found that the combination of practice-based learning in a workplace setting which deliberately engaged students in lifelong learning skills (e.g. self-direction, critical thinking, problem solving, self-evaluation, and collaboration) paired with the opportunity to articulate that learning, helped them self-define what lifelong learning means to them. By self-defining their own learning, students could also both realize and set personal learning goals that were important to them. A lesson we learned in this study is that students' goals may or may not be the goals that we predetermine for them in higher education; yet, in the context of our disciplines, we can offer them content and experiential learning opportunities to engage with that material and develop transferable, lifelong learning skills.

Discussion

The workplace learning environment in our study was specifically designed to develop what Gardner (2014) refers to as adaptive innovators, with "experiences and processes that enable students to further their purpose by building awareness and confidence to explore new possibilities while handling familiar tasks and assignments" (p. 69). The collective processes with which students engaged in regards to the LEARN framework—written responses, receiving peer feedback, and doing the mock interviews—proved to have significant strengths that could have beneficial implications for other academic and workplace contexts.

One of the familiar problems with reflection is that it can become an academic exercise and lack integration between the experience and its implications within a wider setting. As Gardner (2014) claims, it can become an exercise in rhetoric for the sake of evaluation. However, the LEARN framework supported students in reflecting more deeply on their workplace learning. For example, our results showed that students articulated their conceptions of what they learned using actual examples from their workplace experience, much like one would do during a job interview or in a university class where the requirement may be to connect theory to practice. We see making these deeper

connections between beliefs and practice or between theory and practice as foundational to the development of reflective practitioners in many fields (Brookfield, 2017; Schön, 1983). Educators in higher education or other workplace contexts could help students develop further as reflective practitioners by adapting the LEARN framework to include prompts to help students uncover gaps between their conceptions and knowledge and their actual “practice.” In educational research in particular, this kind of reflection has been shown to lead to significant learning via positive conceptual change and improvements in practice (e.g. Olsson & Roxå, 2012; Schön, 1983).

The opportunity for students to participate in mock interviews and receive immediate feedback on their learning is another strength of the LEARN framework. The written reflection, together with the simulated job interviews, were designed to help students to self-evaluate their learning and to prompt them to make their implicit learning more explicit for an external audience. Both student peers and the research staff were involved in giving feedback to students on their reflective responses (either in preparation for the mock interviews or in the actual mock interviews themselves). The LEARN framework prompted students to reflect on their own experiences about their personal growth, especially in terms of how their learning might transfer to other, future workplace contexts. Furthermore, they could offer sophisticated responses, articulating their aptitude for lifelong learning skills such as working in teams, self-regulation, and problem solving. Research has shown that feedback that is targeted toward learning goals, timely and frequent, is effective for helping students to move forward in their learning (Ambrose, Bridges, DiPietro, Lovett, & Norman, 2010). As an extension, educators or managers in workplace contexts might consider using the LEARN framework to help individuals take stock of their current learning and set future goals for development.

The current study offered the luxury of working with a small group of students to investigate the LEARN method. As mentioned, there was no quantitative analysis due to the small sample size, but the pre-and post-survey components were originally developed for use with large cohorts. To make an impact on employability prospects for undergraduate students, the method must be scalable to larger cohorts. If we consider this personal growth as a journey, it is very relevant for students to understand where they are in that journey. The spider diagrams enable a reference-point for students, using a survey tool that can be deployed with larger groups than the select sample included in the current study. The students involved in the study were the successful applicants from a pool of more than 70 who applied to work on the project. We see from Figure 1 that they were all highly motivated, and that they had already demonstrated interest and aptitude in the area of assessment of learning. For these reasons, they might have been more inclined toward reflective practice than someone fulfilling a job role in an area of lesser personal interest.

Higher education institutions want to provide the best preparation for their students as they move into the workforce. Given that the pathway to work opportunities is commonly through a job interview, we might start asking ourselves how equipped students are for making compelling assertions about their skills in a job interview that are both evidence-based and articulate. From the student responses, we can see that the LEARN framework not only elicits articulation of skills and behaviors, but also provides a reflection opportunity for students to experience deep learning. That said, the evidence (student reflections) presented here is based wholly on self-evaluation. Some researchers suggest that workplace supervisors should play a role in evaluating a student’s professional competence in the workplace (McNamara, 2013), and this would certainly be important

LEARN Framework for articulating workplace learning.

for technical skills or competencies specific to a professional field. The skills reflected on in the activities associated with the LEARN framework are transferable skills that would be relevant to more than a single professional field.

Queen's University, along with many higher education institutions, is under increasing pressure to expand experiential learning opportunities for students, a part of which is work-integrated learning. Our contribution to this endeavor was to take student jobs at our institution and build in reflective opportunities to increase the meta-cognitive component by taking advantage of a deep learning opportunity. The LEARN framework can provide direction in terms of what to ask students about their own learning and how to prompt them in reflective processes. We recognize that the current study had the luxury of a small, highly focused group of participants, and that this labor-intensive intervention may not be practical for larger work-placement cohorts. Additionally, it is not possible to generalize the results of four select participants to an entire institution. The method described in the current study was investigated as proof of concept. The results were promising, and previous work suggests that the survey component would be feasible for scaling to larger groups. Further work would be needed to determine whether the interview components would be feasible at scale. One possibility may be to divide students into groups and provide them with simulated or actual job tasks, or to employ peer activities for the mock interview process. The pre- and post-survey could be conducted, and paired groups could then act as panel members for each other. We saw mentorship as a key element in the process, so strategies may need to be adapted for the application of this framework in larger cohorts.

Conclusion

A small number of undergraduate students employed to work on a research project engaged with a Learning Evaluation and Reflection Narrative (LEARN) framework to prompt reflection and articulation of their workplace learning. Evidence from the pre- and post-survey suggested individual gains in areas of organization and motivation. More importantly, the activities in the LEARN framework facilitated students' articulation of their own learning. By using the LEARN framework in a workplace setting, we cultivated a context that supported students' development of lifelong learning skills and habits (such as goal-setting, self-direction, efficacy, and extending and connecting knowledge). The workplace learning context presented in our study also offered students the opportunity to define lifelong learning for themselves and to embody what it means to them to be a lifelong learner. In short, the students not only knew what it meant to them to be lifelong learners, but they actually engaged in practices where they enacted lifelong learning skills. Given that learning is personal, social and situational, employing tools like the LEARN framework is important to the personal development of each individual and their conceptions of lifelong learning. A further preliminary finding is that the LEARN framework helped students to understand how they enact these conceptions. Through this study, we came to realize that we can honor different conceptions of learning by students articulating what learning means to them as contextualized in their workplace and/or academic learning experiences.

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